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Distributions of amplitude and phase fluctuations in tilt ionospheric sounding signals

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Abstract

The impact of amplitude and phase fluctuations in tilt ionospheric sounding signals on the accuracy of determining angles of arrival in small-base antenna systems is discussed. The comparison of empirical distributions of ionospheric signal amplitude fluctuations using theoretical models, such as Rician distribution, lognormal distribution, was carried out. Amplitude fluctuation distributions for various radio links and propagations conditions have also been compared. It was found that the distributions considerably differ uniform for realizations with a significant reflect component.